

08/25/00
JC900 U.S. PTO

Attorney Docket No. E001.P001U1

08-28-00
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

BRYAN W. BOCKHOP, LLC
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August 25, 2000

JC957 U.S. PTO
09/648023
08/25/00

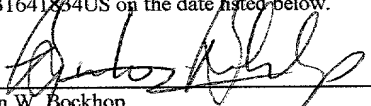
Dear Sir:

Transmitted herewith for filing are the specification and claims of the utility patent application of:

Inventor(s): Raj [NMI]. Mahadevaiah

Title of Invention: TELEPHONE INTERCEPTOR

Also enclosed are:

4	SHEETS OF	<input checked="" type="checkbox"/> FORMAL DRAWINGS	<input type="checkbox"/> INFORMAL DRAWINGS
X	OATH OR DECLARATION OF APPLICANT(S)		
X	A POWER OF ATTORNEY		
	A PRELIMINARY AMENDMENT		
X	A VERIFIED STATEMENT TO ESTABLISH SMALL ENTITY STATUS UNDER 37 C.F.R. §1.9 AND §1.27		
X	A CHECK IN THE AMOUNT OF \$345.00 TO COVER THE FILING FEE.		
	THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED IN CONNECTION WITH THE FOLLOWING OR CREDIT ANY OVERPAYMENT TO ACCOUNT NO. XXX		
	A CERTIFIED COPY OF PREVIOUSLY FILED FOREIGN APPLICATION NO. FILED IN ON .		
X	I hereby certify that this correspondence is being placed in the United States Mail as Express Mail No. EK931641834US on the date listed below.  Bryan W. Bockhop Date 8/25/00		
	A computer readable form of the sequence listing in compliance with 37 C.F.R. § 1.821(e). The content of the computer readable form of the sequence listing and the sequence listing in the specification of the application as filed are the same.		
X	OTHER (IDENTIFY): AUTHORIZATION TO TREAT REPLY REQUIRING EXTENSION OF TIME AS INCORPORATING PETITION FOR EXTENSION OF TIME;		

The filing fee is calculated as follows:

CLAIMS AS FILED, LESS ANY CLAIMS CANCELLED BY AMENDMENT

TOTAL CLAIMS = $14 - 20 = 0 \times \$18.00 =$	\$0.00
INDEPENDENT CLAIMS = $2 - 3 = 0 \times \$78.00 =$	\$0.00
BASIC FEE =	\$690.00
TOTAL OF ABOVE CALCULATIONS =	\$690.00
REDUCTION BY 1/2 FOR SMALL ENTITY =	\$345.00
TOTAL FILING FEE =	\$345.00

Respectfully submitted,



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Attorney Docket No. E001.P001U1

Express Mail No. [EK931641834US]
PATENT

5

10

15

TO ALL WHOM IT MAY CONCERN:

20 Be it known that I, **Raj [NMI] Mahadevaiah**, having a post office address
and a residence address at 245 Seale Lane, Alpharetta, Georgia 30022, a citizen of
U.S.A., have invented new and useful improvements in a

TELEPHONE INTERCEPTOR

25

for which the following is a specification.

TELEPHONE INTERCEPTOR**CROSS REFERENCE TO A PROVISIONAL APPLICATION**

5 This patent application claims priority on Provisional Application Serial Number 60/151,177, filed on August 27, 1999, the entirety of which is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

10

1. Field of the Invention

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The present invention relates to telephone communications and, more specifically, to a method and apparatus for intercepting and, if necessary, delaying telephone calls.

2. Description of the Prior Art

20

25

Existing telephones often ring at inopportune moments, such as a just few minutes after a child has begun a nap, a few minutes after a telephone user has stepped into a bath, or when the user simply desires privacy. Several approaches to this problem are typically employed. For example, one may ignore the telephone and allow an answering machine to answer the telephone. However, this approach may be irritating to the user and may wake the freshly fallen asleep child. The user may also turn the telephone ringer "off." However, this approach requires that every telephone in a house be turned off also. The user may take the telephone off of the hook. However, this approach causes incoming callers to believe that the user is actively accepting telephone calls, causing considerable frustration. Also, the user may not be able to place outgoing calls with the off-hook approach.

30

Some telephone sets employ "do not disturb" buttons that inhibit all ringing once activated. However, users often forget to release the do not disturb function

once they desire to start receiving calls again and, thus, miss desired incoming calls. Furthermore, such "do not disturb" buttons usually only apply to a single telephone and not an entire household telephone loop.

5 Therefore, there is a need for a system that allows a user to inhibit ringing of every telephone in a household and, if the user desires, to generate a message indicating that the user wishes not to be called for a selected period of time.

SUMMARY OF THE INVENTION

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The disadvantages of the prior art are overcome by the present invention which, in one aspect, is an apparatus for intercepting telephone calls on a telephone channel connected to a telephone. A ring detector, that is in communication with the telephone channel, is capable of detecting an incoming telephone call and generates a
15 ring signal upon detection of a incoming telephone call. A user input receives an input from a user indicating that the user desires not to be called. A counter, that is responsive to the user input, is programmed to count a selected amount of time from assertion of the user input. A delay circuit, that is responsive to the counter, the ring signal and the user input, is programmed to allow the telephone to ring if an incoming
20 call has been detected and if more than the selected amount of time has passed since the user input was last asserted. The delay circuit is also programmed to prevent the telephone from ringing if an incoming call has been detected and if less than the selected amount of time has passed since the user input was last asserted.

25 In another aspect, the invention is a method of intercepting telephone calls on a telephone channel connected to a telephone and a user input that indicates that a user desires not to be called. An incoming telephone call is detected on the telephone channel. A ring signal is generated upon detection of a incoming telephone call. It is determined if the user input has been asserted by the user. The telephone is allowed to
30 ring if an incoming call has been detected and if more than a selected amount of time has passed since the user input was last asserted. The telephone is prevented from

ringing if an incoming call has been detected and if less than the selected amount of time has passed since the user input was last asserted.

These and other aspects of the invention will become apparent from the following description of the preferred embodiments taken in conjunction with the following drawings. As would be obvious to one skilled in the art, many variations and modifications of the invention may be effected without departing from the spirit and scope of the novel concepts of the disclosure.

BRIEF DESCRIPTION OF THE FIGURES OF THE DRAWINGS

FIG. 1 is a schematic diagram of one embodiment of the invention.

FIG. 2A is a flow chart showing the timing function.

FIG. 2B is a flow chart showing the inhibiting function.

FIG. 3A is a schematic diagram of one embodiment of an interceptor.

FIG. 3B is a schematic diagram of a timer usable in the embodiment of FIG. 3A.

FIG. 3C is a schematic diagram of a DTMF detector usable in the embodiment of FIG. 3A.

FIG. 3D is a schematic diagram of a power supply driver usable in the embodiment of FIG. 3A.

FIG. 3E is a schematic diagram of voltage regulator usable in the embodiment of FIG. 3A.

FIG. 3F is a schematic diagram of a message generator usable in the embodiment of FIG. 3A.

5 **FIG. 3G** is a schematic diagram of a message recording system usable in the embodiment of FIG. 3A.

DETAILED DESCRIPTION OF THE INVENTION

10 A preferred embodiment of the invention is now described in detail. Referring to the drawings, like numbers indicate like parts throughout the views. As used in the description herein and throughout the claims, the following terms take the meanings explicitly associated herein, unless the context clearly dictates otherwise: the meaning of "a," "an," and "the" includes plural reference, the meaning of "in" includes "in" and "on." Also, as used herein, "global computer network" includes the Internet.

15 As shown in FIG. 1, the present invention **100**, includes an interceptor **110** that intercepts telephone calls received from a local exchange carrier (LEC) **102** to a household telephone loop **104**. The telephone loop **104** includes one or more telephones **112** connected to a common telephone channel, such as a hard wired
20 telephone line.

The interceptor **110** intercepts incoming telephone calls on the telephone channel and selectively inhibits ringing of the telephone sets **112** connected to the telephone channel for a selected period of time. In one embodiment, a user presses a
25 button, or other user input, that acts like a "snooze bar" on an alarm clock by inhibiting the ringing of the telephone. Once a preselected period from the time the button is depressed has expired, the telephone is allowed to ring normally.

30 Unlike an answering machine, the invention **100** provides the capability of answering all incoming calls without ringing the telephone sets within a subscriber's local loop for a selected period of time. In one embodiment, each click of the snooze

button will provide a progressively longer period of ring delay. For example, one click will delay ringing for 15 minutes, a second click will delay ringing for 30 minutes, a third click will delay ringing for one hour, etc. Even if the invention is currently active, outgoing calls are allowed any time. Unlike a do not disturb button, the inhibitor **110** is capable of inhibiting ringing for only a selected amount of time, after which the user is able to receive telephone calls normally.

The invention may be embodied as a "do not disturb" device, in which the invention detects the ac ring signal on the telephone line and immediately sets the device to an "off-hook" condition. This action completes the circuit to the local telephone exchange (LEC) and DC current flows to the user's local loop. The LEC removes the ringing signal and the ring-back tone from the circuit. This prevents the ringing signal from reaching any of the telephone sets within the user's local loop. In one embodiment, the invention then plays an audio message to the caller with instructions regarding when to call back. The device then returns the line to the on-hook condition.

The device may also generate a call-in-progress indication to the user. This may be done with an indicator light, a text or graphic indication on a video display (e.g., a television or computer screen), or even by playing soft music. The message could even include a caller identification. The user would then have the option to lift the handset and accept the call. In one embodiment, the invention could automatically activate an answering machine during the delay period, allowing the caller to leave a message.

As shown in FIG. 2A, the inhibitor waits until it senses a user input **202** indicating that the user desires not to be called for a selected amount of time. Upon sensing the user input, the inhibitor starts a timer **204**. The inhibitor also continuously waits for incoming calls **210**. Upon sensing an incoming call, the device asserts a ring signal **212** and determines if the user input has been asserted **214**. If not, then the telephone is allowed to ring **222**, otherwise the inhibitor determines if time remains on

the timer **216** (which is typically a count-down timer). If the timer has not timed out then ringing is inhibited **220**, otherwise the telephone is allowed to ring **222**.

5 The user input could be a button on a telephone handset, or other device. It could also be entered by pressing a preselected set of keys on a telephone key pad. For example, by entering “*47” (or some other sequence of keys) the user could activate the inhibitor. This could be done by circuitry installed in the local telephone, or could be done by software maintained by the LEC. In fact, all of the functions of the invention could be done either locally or at the LEC.

10 As shown in FIGS. 3A-3G, one embodiment of the invention **310** includes: a unit activator circuit **320** that allows the user to interface with the device, allowing the user to indicate that the user desires not to be called for a selected period; a ring detector and off-hook activator circuit **330** that detects incoming telephone calls and
15 generates a ring signal upon detection of a incoming telephone call, thereby inhibiting ringing of the telephones in a household loop; a voice message playback circuit **340** that generates a voice message to the caller, if the user desires such a message to be generated; and a voice message recording circuit **350** that is used to record voice messages.

20 The unit activator circuit **320** includes a settable timer circuit, which may be activated by any telephone in the household. The unit activator circuit **320** also includes a circuit **320b** that detects DTMF tones on the telephone channel. The ring detector and activator circuit **330** provides a visual indicator that calls are being
25 intercepted and includes a power supply **330a** that drives the ring inhibiting function. The power supply **330a** allows outgoing calls and allows answering of calls during an interception period. The ring detector and off-hook activator **330** also includes an off-hook activator **330b**.

30 The voice message playback circuit **340** transmits a user-recorded message indicating that the user is not currently answering telephone calls. The playback circuit

CLAIMS

What is claimed is:

1. An apparatus for intercepting telephone calls on a telephone channel connected to a telephone, comprising:
 - a. a ring detector, in communication with the telephone channel, that is capable of detecting an incoming telephone call and that generates a ring signal upon detection of a incoming telephone call;
 - b. a user input that is capable of receiving an input from a user indicating that the user desires not to be called;
 - c. a counter, responsive to the user input, programmed to count a selected amount of time from assertion of the user input; and
 - d. a delay circuit, responsive to the counter, the ring signal and the user input, that is programmed to:
 - i. allow the telephone to ring if an incoming call has been detected and if more than the selected amount of time has passed since the user input was last asserted; and
 - ii. prevent the telephone from ringing if an incoming call has been detected and if less than the selected amount of time has passed since the user input was last asserted.
2. The apparatus of Claim 1, further comprising a telephone selection circuit, operatively coupled to a plurality of telephones, that includes a user input that indicates to the controller which of the plurality of telephones are to have ringing inhibited.
3. The apparatus of Claim 1, further comprising a message playback circuit, responsive to the controller, that plays a message to an incoming caller when the controller inhibits ringing of the telephone.

4. The apparatus of Claim 1, further comprising a visual incoming call indicator that provides a visual indication that a telephone call is incoming while the telephone inhibited from ringing.
5. The apparatus of Claim 4, wherein the visual incoming call indicator comprises an indicator light.
6. The apparatus of Claim 4, wherein the visual incoming call indicator comprises:
 - a. a video display generator that generates an icon representing an incoming call; and
 - b. a video display circuit that superimposes the icon onto a video display.
7. The apparatus of Claim 6, wherein the video display circuit comprises a text message generator.
8. The apparatus of Claim 6, wherein the video display circuit comprises a symbol generator.
9. A method of intercepting telephone calls on a telephone channel connected to a telephone and a user input that indicates that a user desires not to be called, comprising the steps of:
 - a. detecting an incoming telephone call on the telephone channel;
 - b. generating a ring signal upon detection of a incoming telephone call;
 - c. determining if the user input has been asserted by the user; and
 - d. allowing the telephone to ring if an incoming call has been detected and if more than a selected amount of time has passed since the user input was last asserted; and
 - e. preventing the telephone from ringing if an incoming call has been detected and if less than the selected amount of time has passed since the user input was last asserted.

10. The method of Claim 9, wherein the determining step comprises sensing closing of a switch local to the telephone.
11. The method of Claim 9, wherein the determining step comprises sensing of a code entered on a keypad of the telephone.
12. The method of Claim 11, further comprising the step of determining a length of a delay during which ringing of the telephone is to be inhibited, the length being based on a selection of keys depressed on a telephone keypad..
13. The method of Claim 9, wherein the determining step is completed by a circuit that is integrated into the telephone.
14. The method of Claim 9, wherein the determining step is completed by a circuit controlled by a telephone exchange carrier.

ABSTRACT

5 An apparatus for intercepting telephone calls on a telephone channel connected to a telephone includes a ring detector, that is in communication with the telephone channel. The ring detector is capable of detecting an incoming telephone call and generates a ring signal upon detection of a incoming telephone call. A user input receives an input from a user indicating that the user desires not to be called. A counter, that is responsive to the user input, is programmed to count a selected amount of time from assertion of the user input. A delay circuit, that is responsive to the counter, the ring signal and the user input, is programmed to allow the telephone to ring if an incoming call has been detected and if more than the selected amount of time has passed since the user input was last asserted. The delay circuit is also programmed to prevent the telephone from ringing if an incoming call has been detected and if less than the selected amount of time has passed since the user input was last asserted.

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

(X) Original () Supplemental () Substitute () PCT

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled "**TELEPHONE INTERCEPTOR**" which is described and claimed in the specification

(check one) ☒ which is attached hereto, or
 ☐ which was filed on _____ as United States Application No. _____, or
 ☐ in International Application No. PCT/_____, filed _____, and as amended on _____
 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information known by me to be material to the patentability of the claims of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a) - (d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate relating to this subject matter having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATIONS: (ENTER BELOW IF APPLICABLE)			PRIORITY CLAIMED (MARK APPROPRIATE BOX BELOW)	
APP. NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	YES	NO
N/A				

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

APPLICATION NUMBER	FILING DATE
60/151,177	08/27/99

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose all information known by me to be material to the patentability of the claims of this application as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	FILING DATE	STATUS (MARK APPROPRIATE COLUMN BELOW)		
		PATENTED	PENDING	ABANDONED
N/A				

I hereby appoint the following attorneys and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Bryan W. Bockhop Reg. No. 39,613
Lance D. Reich Reg. No. 42,097

Address all telephone calls to Bryan W. Bockhop, Esq. at telephone no. (770) 291-2125.

Address all correspondence to: Bryan W. Bockhop, Esq.
BOCKHOP & REICH, LLP
3235 Satellite Blvd.
Bldg. 400, Suite 300
Duluth, GA 30096

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: **Raj [NMI] Mahadevaiah**

Inventor's signature: _____

Date: _____

Residence:

245 Seale Lane, Alpharetta, Georgia 30022

Post Office Address:

245 Seale Lane, Alpharetta, Georgia 30022

Citizenship:

U.S.A.

APPLICANT OR PATENTEE: **Raj [NMI] Mahadevaiah**
FOR: **"TELEPHONE INTERCEPTOR"**

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR**

As below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41 (a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled **"TELEPHONE INTERCEPTOR"** described in the specification filed herewith.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern, or organization
☐ persons, concerns or organizations listed below*

*NOTE: Separate verified statements are required for each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME _____
ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

FULL NAME _____
ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon or any patent to which this verified statement is directed.

Raj [NMI] Mahadevaiah



Signature of Inventor

Date: 8/25/00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICEIn re Application of
Mahadevaiah

Serial No.: Unassigned

Filed: **Concurrently**For: **TELEPHONE INTERCEPTOR**

Group Art Unit: Unassigned

Examiner: Unassigned

Jc857 U.S. PTO

09/648023

**Authorization to Treat Reply Requiring Extension of Time
as Incorporating Petition for Extension of Time**BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231BRYAN W. BOCKHOP, LLC
3235 Satellite Blvd.
Bldg. 400, Suite 300
Duluth, GA 30096

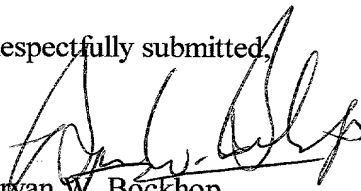
August 25, 2000

Sir:

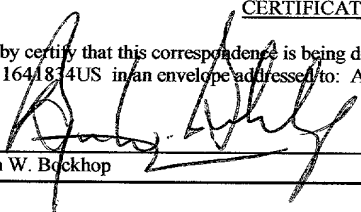
Pursuant to 37 C.F.R. §1.136(a)(3), the Commissioner is hereby requested and authorized to treat any concurrent or future reply in the above-identified application, requiring a petition for an extension of time for its timely submission, as incorporating a petition for extension of time for the appropriate length of time.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 501,403.

Respectfully submitted,


Bryan W. Bockhop
Registration No. 39,613BRYAN W. BOCKHOP, LLC
3235 Satellite Blvd.
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Duluth, GA 30096
Tel: 770-291-2125
Fax: 770-291-2126**CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. § 1.10**

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail, Express Mail No. EK931641874US in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the day listed below.


Bryan W. BockhopDate 8/25/00

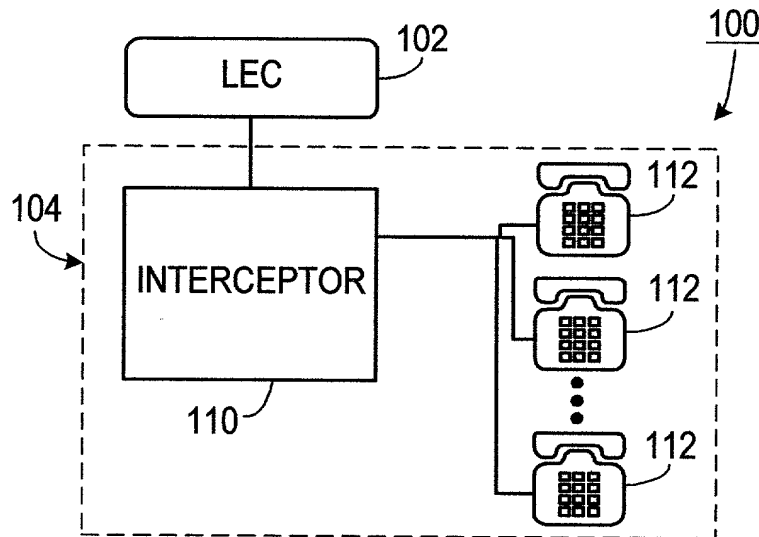


FIG. 1

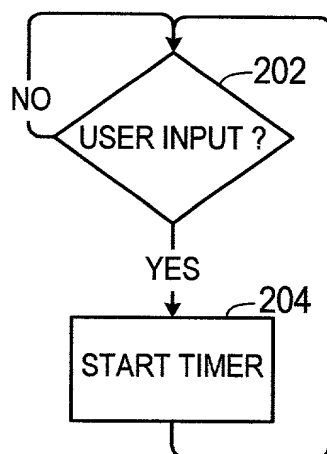


FIG. 2A

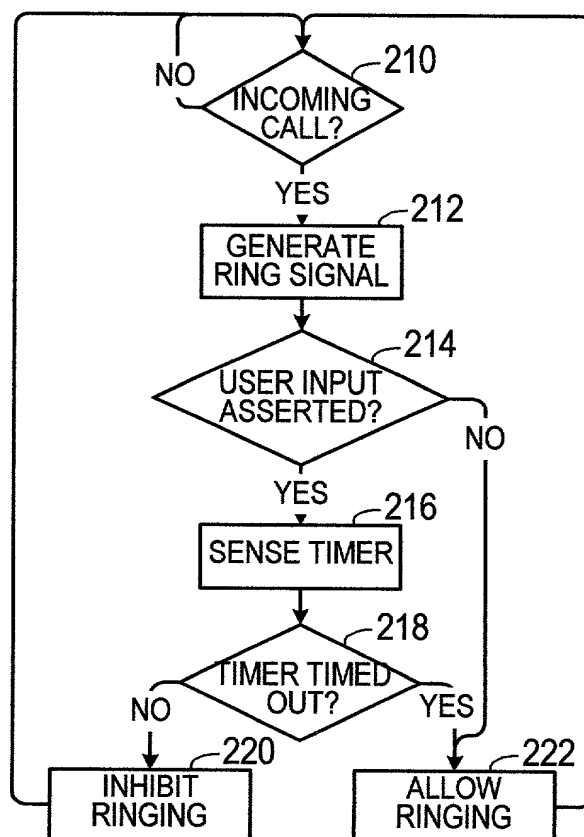


FIG. 2B

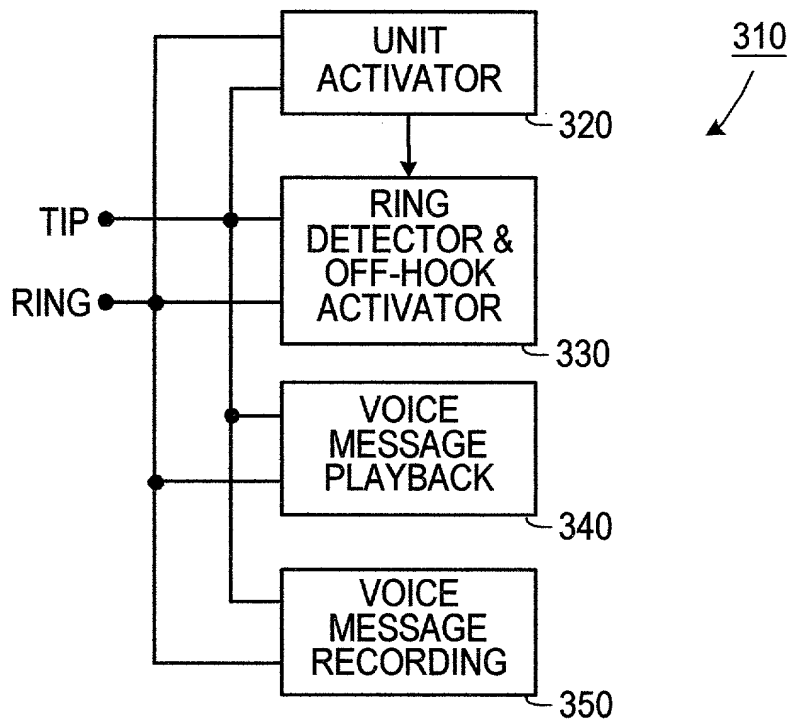


FIG. 3A

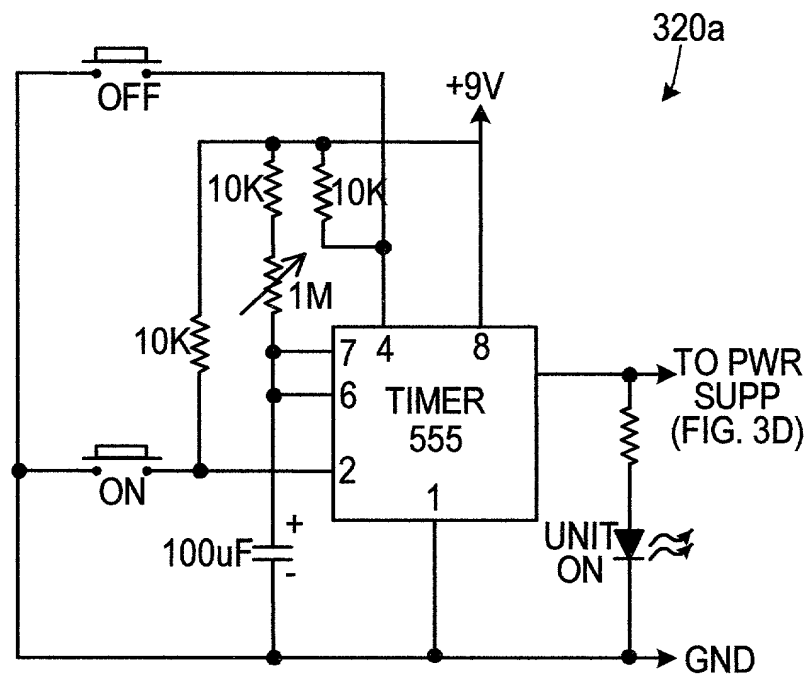


FIG. 3B

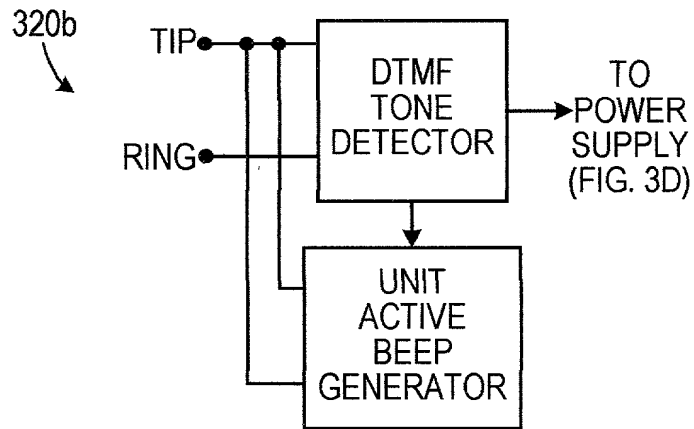


FIG. 3C

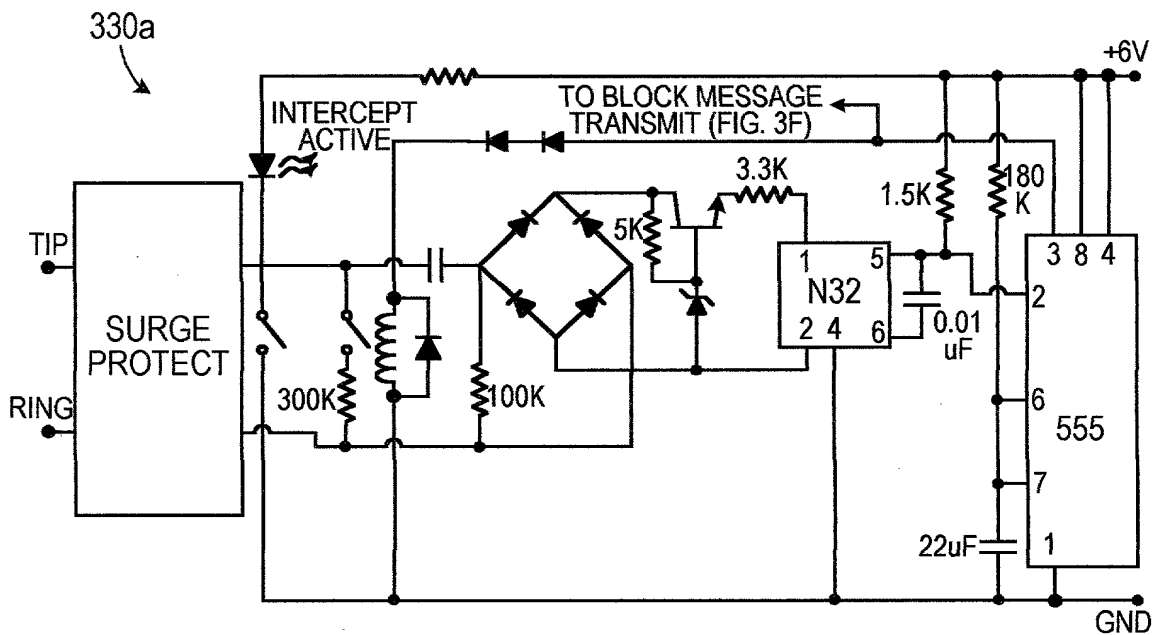


FIG. 3D

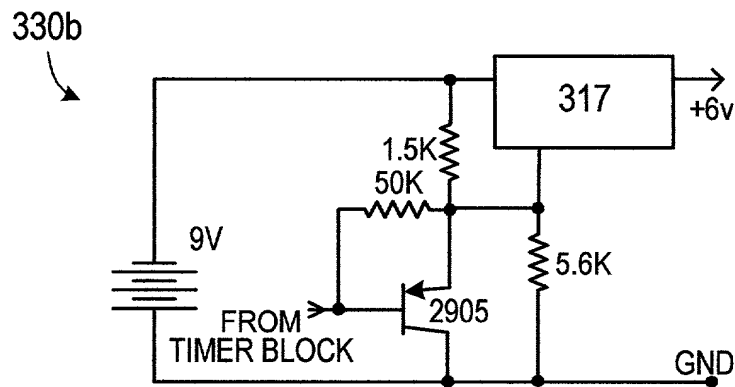


FIG. 3E

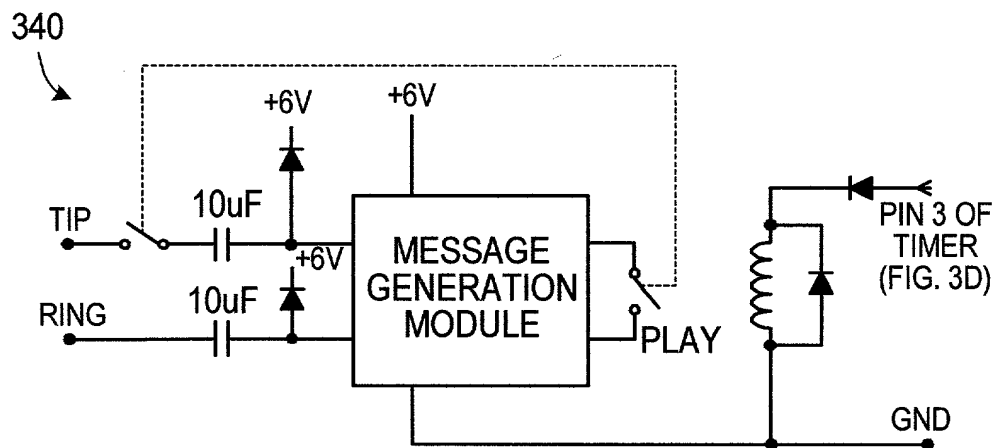


FIG. 3F

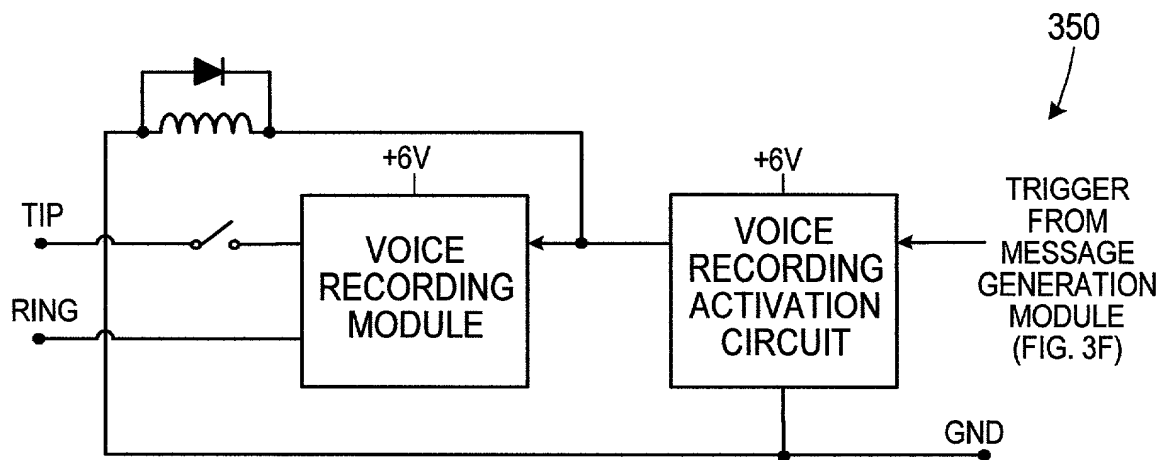


FIG. 3G